REMARKS

Status of the Claims

Claims 1-32 are pending, with claims 1, 27, and 30 being independent. Claims 1, 11, 12, 27, and 30 have been amended to even more clearly recite and distinctly claim the present invention. Support for the amendments may be found throughout the specification, including for example at page 13, line 6 – page 15, line 23. Accordingly, no new matter has been added. Claims 33 and 34 have been canceled without prejudice to or disclaimer of the subject matter contained therein.

Applicants respectfully request the Examiner to reconsider and withdraw the outstanding rejections in view of the foregoing amendments, the following remarks, and the attached declaration under 37 C.F.R. §1.132.

Claim Objections

Claims 11 and 12 stand objected to because of informalities. Claims 11 and 12 have been amended to replace the word "having" with the word "has." Accordingly, withdrawal of this objection is respectfully requested.

Claim Rejections Under 35 U.S.C. § 102(b) and § 103(a)

Claims 1-8, 10-28, 33, and 34 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly being obvious over WO 99/45085. Applicants respectfully disagree with the rejection; therefore, this rejection is respectfully traversed.

WO 99/45085 discloses an integrated process for preparing a lubricant oil base stock including an isomerization step followed by a solvent dewaxing step. As discussed in the Background section of the present application, the lubricant oil base stocks obtained in WO 99/45085 were disclosed as having viscosity indexes of greater than about 140. The Examples of WO 99/45085 demonstrate lubricant oil base stocks with viscosity indexes in the 140's with the highest being 156. As set forth in the attached declaration under 37 C.F.R. §1.132 by Stephen Miller, the lubricant base oils made according to Examples 1-4 of WO 99/54085 do not meet the claimed properties of the lubricant base oils made according to the presently claimed processes.

In contrast to WO 99/54085, the presently claimed processes of making a lubricant base oil comprise ***hydroisomerization dewaxing*** a waxy feed using a shape selective intermediate pore size molecular sieve to produce an intermediate oil isomerate, wherein the intermediate oil isomerate comprises paraffinic hydrocarbon components in which the extent of branching is less than 7 alkyl branches per 100 carbons; ***analyzing*** the intermediate oil isomerate to determine that the intermediate oil isomerate comprises paraffinic hydrocarbon components in which the extent of branching is less than 7 alkyl branches per 100 carbons; and ***solvent dewaxing*** the intermediate oil isomerate to produce a lubricant base oil wherein the lubricant base oil comprises paraffinic hydrocarbon components in which the extent of branching is less than 8 alkyl branches per 100 carbons and less than 20 wt% of the alkyl branches are at the 2 position, the lubricant base oil having a pour point of less than -8 °C; a kinematic viscosity at 100 °C of about 3.2 cSt or greater; and a Viscosity Index greater than a Target Viscosity Index as calculated by the following equation:

Target Viscosity Index = 22 x ln(Kinematic Viscosity at 100 °C) + 132.

As disclosed in the present application and as set forth in the attached declaration under 37 C.F.R. §1.132 by Stephen Miller, it has been surprisingly discovered that in lubricant base oils with kinematic viscosities greater than about 3.2 cSt at 100°C, minimizing the overall branching while maximizing the branching toward the middle of the lubricant base oil molecules provides a lubricant base oil with exceptionally low pour points and extremely high viscosity indexes, that are greater than the Target Viscosity Index, as defined in the present application and as presently claimed. Therefore, according to the presently claimed processes, high quality lubricant base oils with exceptionally high viscosity indexes and low pour points are produced.

It is respectfully submitted that the presently claimed process is significantly different than the process of WO 99/45085. It is respectfully submitted that WO 99/45085 does not disclose or suggest a processes of making a lubricant base oil comprising ***hydroisomerization dewaxing*** a waxy feed using a shape selective intermediate pore size molecular sieve to produce an intermediate oil isomerate, wherein the intermediate oil isomerate comprises paraffinic hydrocarbon components in which the extent of branching is less than 7 alkyl branches per 100 carbons; ***analyzing*** the intermediate oil isomerate to determine that the intermediate oil isomerate comprises paraffinic hydrocarbon components in which the extent of branching is less than 7 alkyl branches per 100 carbons; and ***solvent dewaxing*** the intermediate oil isomerate to produce a lubricant base oil wherein the lubricant base oil comprises paraffinic hydrocarbon components in which the extent of branching is less than 8 alkyl branches per 100 carbons and less than 20 wt% of the alkyl branches are at the 2 position, the lubricant base oil having a pour point of less than -8 °C; a kinematic viscosity at 100 °C of about 3.2 cSt or greater; and a Viscosity Index greater than the Target Viscosity Index as calculated by the presently claimed equation.

As set forth in the attached declaration under 37 C.F.R. §1.132 by Stephen Miller, the process as disclosed in WO 99/54085 does not necessarily provide lubricant base oil products having the claimed characteristics. Moreover, WO 99/54085 does not disclose or suggest ***analyzing*** the intermediate oil isomerate to determine that the intermediate oil isomerate comprises paraffinic hydrocarbon components in which the extent of branching is less than 7 alkyl branches per 100 carbons. Furthermore, a s set forth in the attached declaration under 37 C.F.R. §1.132 by Stephen Miller, it is not mere adjustment of the WO 99/54085 process conditions to obtain a product having the claimed characteristics.

Accordingly, for at least the above-noted reasons, Applicants respectfully request that the rejection under 35 U.S.C. § 102(b), or in the alternative, under 35 U.S.C. § 103(a), over WO 99/45085 be withdrawn.

Claims 9 and 29-32 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Miller and further in view of U.S. Patent No. 6,090,989 ("Trewella"). Applicants respectfully disagree with the rejection; therefore, this rejection is respectfully traversed.

As described above, WO 99/45085 discloses an integrated process for preparing a lubricant oil base stock including an isomerization step followed by a solvent dewaxing step, and as set forth in the attached declaration under 37 C.F.R. §1.132 by Stephen Miller, the lubricant base oils made according to Examples 1-4 of WO 99/54085 do not meet the claimed properties of the lubricant base oils made according to the presently claimed processes.

Trewella is related to an isoparaffinic lube basestock compositions. Trewella is cited merely as disclosing that it is conventional to blend base oils with additives such as polyalphaolefins.

Applicants respectfully submit that even if there were some suggestion or motivation to combine WO 99/45085 and Trewella and a reasonable expectation of success, WO 99/45085 and Trewella, even when combined, do not disclose or suggest all the claim limitations of claims 9 and 29-32. As described above in detail, the presently claimed processes are significantly different than the process of WO 99/45085, and WO 99/45085 does not disclose or suggest all of the claim limitations of the presently claimed processes.

As cited, Trewella fails to cure the many, above-noted deficiencies with respect to WO 99/45085. Accordingly, even if combined WO 99/45085 and Trewella do not disclose or suggest the presently claimed processes of claims 9 and 29-32.

Accordingly, for at least the above-described reasons, withdrawal of this rejection under 35 U.S.C. § 103(a) is respectfully requested.

Double Patenting

Claims 1-34 stand rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-25 of U.S. Patent No. 6,663,768 ('768 patent). Applicants respectfully disagree with the rejection; therefore, this rejection is respectfully traversed.

Applicants respectfully submit that the '768 patent does not disclose or suggest a processes of making a lubricant base oil comprising ***hydroisomerization dewaxing*** a waxy feed using a shape selective intermediate pore size molecular sieve to produce an intermediate oil isomerate, wherein the intermediate oil isomerate comprises paraffinic hydrocarbon components in which the extent of branching is less than 7 alkyl branches per 100 carbons; ***analyzing*** the intermediate oil isomerate to determine that the intermediate oil isomerate comprises paraffinic hydrocarbon components in which the extent of branching is less than 7 alkyl branches per 100 carbons; and ***solvent dewaxing*** the intermediate oil isomerate to produce a lubricant base oil wherein the lubricant base oil comprises paraffinic hydrocarbon components in which the extent of branching is less than 8 alkyl branches per 100 carbons and less than 20 wt% of the alkyl branches are at the 2 position, the lubricant base oil having a pour point of less than -8 °C; a kinematic viscosity at 100 °C of about 3.2 cSt or greater; and a Viscosity Index greater than the Target Viscosity Index as calculated by the presently claimed equation.

Accordingly, Applicants respectfully request that the rejection for obviousness-type double patenting be withdrawn.

Conclusion

Without conceding the propriety of the rejections, the claims have been amended, as provided above, to even more clearly recite and distinctly claim Applicants' invention and to pursue an early allowance. For the reasons noted above, the art of record does not disclose or suggest the inventive concept of the present invention as defined by the present claims.

In view of the foregoing amendments and remarks and the attached declaration under 37 C.F.R. §1.132, reconsideration of the claims and allowance of the subject application is earnestly solicited. In the event that there are any questions relating to this application, it would be appreciated if the Examiner would telephone the undersigned attorney concerning such questions so that prosecution of this application may be expedited.

In the event any further fees are due to maintain pendency of this application, the Examiner is authorized to charge such fees to Deposit Account No. 02-4800.

Respectfully submitted,

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